



5696

# THYRATRON

GAS-TETRODE, MINIATURE TYPE

5696

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage. . . . . 6.3 . . . . . ac or dc volts

Current. . . . . 0.150 . . . . . amp

Cathode:

Minimum Heating Time, prior

to tube conduction . . . 10 . . . . . sec

Direct Interelectrode Capacitances (Approx.):<sup>o</sup>Grid No.1 to Anode . . . 0.03 . . . . .  $\mu$ mfInput. . . . . 1.8 . . . . .  $\mu$ mfOutput . . . . . 0.54 . . . . .  $\mu$ mf

Ionization Time (Approx.):

For conditions: dc anode volts = 100; grid-No.1

square-pulse volts = +50; peak cathode

amperes during conduction = 0.150. . . . . 0.5  $\mu$ sec

Deionization Time (Approx.):

For conditions: dc anode volts = 500; grid-No.1

volts = -100, grid-No.1 resistor (ohms) =

1000; dc cathode amperes = 0.025 . . . . . 25  $\mu$ sec

For conditions: dc anode volts = 500; grid-No.1

volts = -13; grid-No.1 resistor (ohms) =

1000; dc cathode amperes = 0.025 . . . . . 40  $\mu$ sec

Maximum Critical Grid-No.1 Current, with ac

anode-supply volts (rms) = 350, and

average cathode amperes = 0.025 . . . . . 0.5  $\mu$ amp

Anode Voltage Drop (Approx.) . . . . . 10 volts

Grid-No.1 Control Ratio (Approx.) with grid-No.1

resistor (megohms) = 0; grid-No.2 volts = 0 . . . . . 250

Grid-No.2 Control Ratio (Approx.) with grid-No.1

volts = 0, grid-No.2 resistor (ohms) = 0 . . . . . 15

<sup>o</sup> Without external shield.

### Mechanical:

Mounting Position. . . . . Any

Maximum Overall Length . . . . . 1-3/4"

Maximum Seated Length. . . . . 1-1/2"

Length, Base Seat to Bulb Top (excluding tip). 1-1/8"  $\pm$  3/32"

Maximum Diameter . . . . . 3/4"

Bulb . . . . . T-5-1/2

Base . . . . . Small-Button Miniature 7-Pin

Basing Designation for BOTTOM VIEW . . . . . 7BN

Pin 1-Grid No.1

Pin 2-Cathode

Pin 3-Heater

Pin 4-Heater



Pin 5-Grid No.2

Pin 6-Anode

Pin 7-Grid No.2

FEB. 1, 1949

TUBE DEPARTMENT

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



# THYRATRON

## RELAY and GRID-CONTROLLED RECTIFIER SERVICE

### Maximum Ratings, Absolute Values:

#### PEAK ANODE VOLTAGE:

Forward. . . . .	500 max.	volts
Inverse. . . . .	500 max.	volts

#### GRID-No.2 (SHIELD-GRID) VOLTAGE:

Peak, before anode conduction. . . . .	-50 max.	volts
Average, during anode conduction <sup>■</sup> . . . .	-10 max.	volts

#### GRID-No.1 (CONTROL-GRID) VOLTAGE:

Peak, before anode conduction. . . . .	-100 max.	volts
Average, during anode conduction <sup>■</sup> . . . .	-10 max.	volts

#### CATHODE CURRENT:

Peak . . . . .	0.1 max.	amp
Average <sup>■</sup> . . . . .	0.025 max.	amp
Surge, for duration of 0.1 sec. max. . . .	2 max.	amp

#### GRID-No.2 CURRENT:

Average <sup>■</sup> . . . . .	+0.005 max.	amp
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#### GRID-No.1 CURRENT:

Average <sup>■</sup> . . . . .	+0.005 max.	amp
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#### PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode .	100 max.	volts
Heater positive with respect to cathode .	25 max.	volts

AMBIENT TEMPERATURE RANGE. . . . . -55 to +90 °C

### Typical Operating Conditions for Relay Service:

RMS Anode Voltage. . . . .	117	volts
Grid No.2. . . . .	Connected to cathode at socket	
RMS Grid-No.1 Bias Voltage <sup>□</sup> . . . . .	5	volts
Peak Grid-No.1 Signal Voltage. . . . .	5	volts
Grid-No.1-Circuit Resistance . . . . .	0.1	megohm
Anode-Circuit Resistance <sup>#</sup> . . . . .	5000	ohms

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . .	10 max.	megohms
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■ Averaged over any interval of 30 sec. max.

□ Approximately 180° out of phase with the anode voltage.

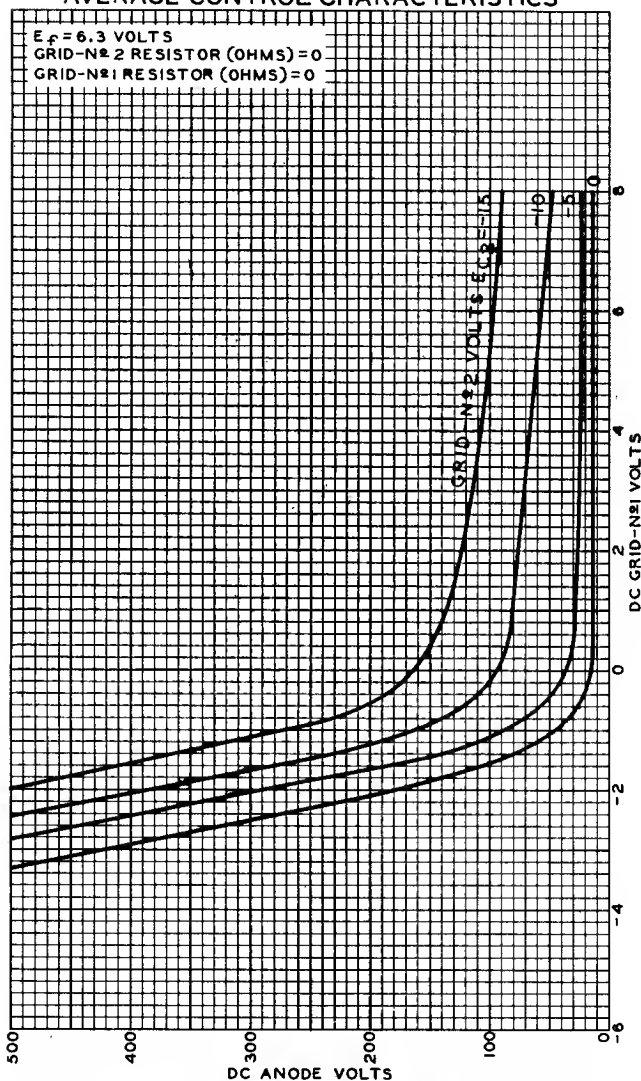
# Sufficient resistance, including the tube load, must be used under any conditions of operation to prevent exceeding the current ratings.



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5696

## AVERAGE CONTROL CHARACTERISTICS



AUG. 6, 1948

DC ANODE VOLTS  
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92CM-7044

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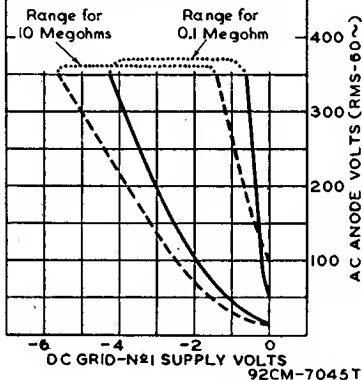
# THYRATRON

## OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

### TYPE 5696

GRID-N#2 (SHIELD) VOLTS=0

RANGES SHOWN ARE FOR TWO VALUES  
OF GRID RESISTOR—0.1 MEG. AND 10  
MEG.—AND TAKE INTO ACCOUNT INITIAL  
DIFFERENCES BETWEEN INDIVIDUAL  
TUBES & SUBSEQUENT DIFFERENCES  
DURING TUBE LIFE, FOR A HEATER-  
VOLTAGE RANGE OF 5.7 TO 6.9 VOLTS  
AND FOR AN AMBIENT TEMPERATURE  
RANGE OF -55 TO +90 °C



FEB. 1, 1949

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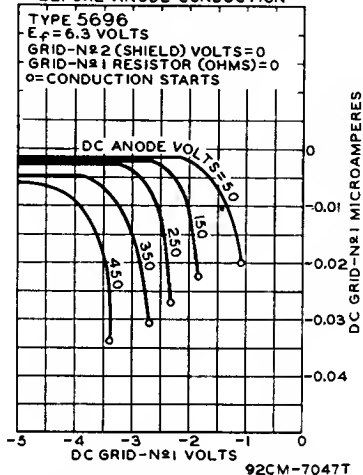
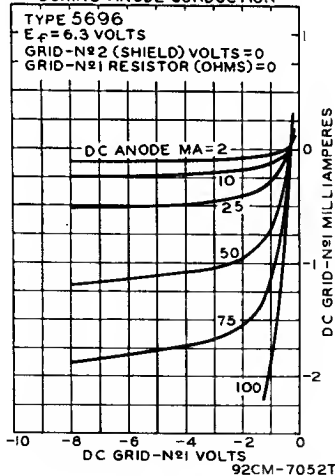
CE-7045T



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## THYRATRON

AVERAGE CHARACTERISTICS  
BEFORE ANODE CONDUCTIONAVERAGE CHARACTERISTICS  
DURING ANODE CONDUCTION

FEB. 1, 1949

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CE-7047T - 7052T

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